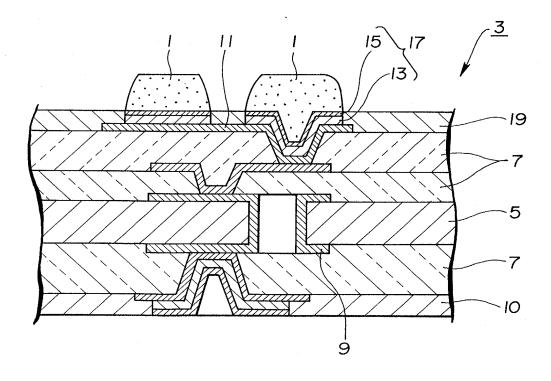


FIG.1B



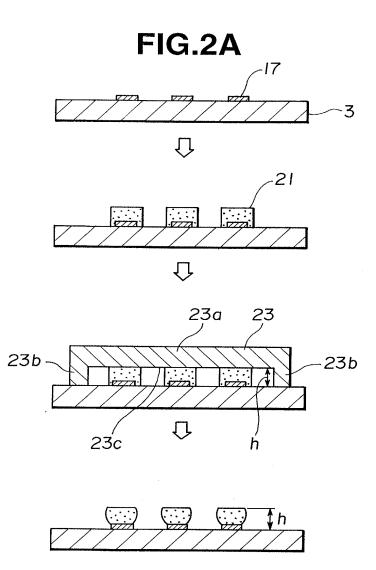


FIG.2B

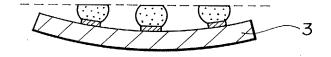


FIG.3

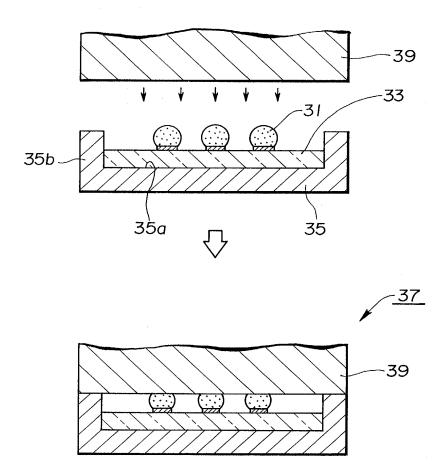


FIG.4A

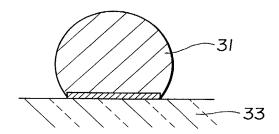


FIG.4B

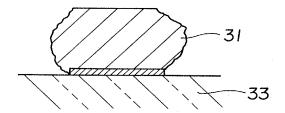


FIG.4C

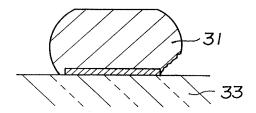
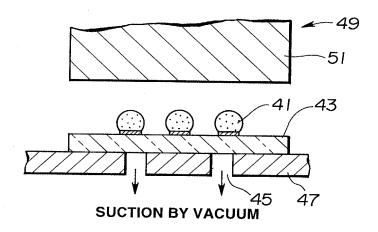


FIG.5





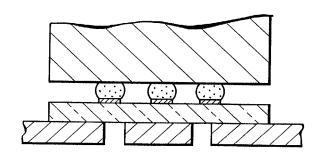


FIG.6

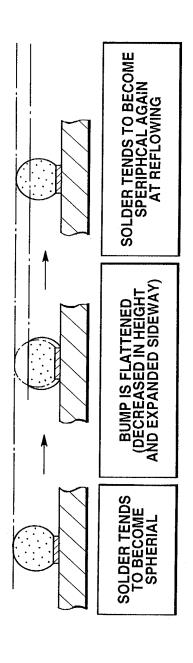


FIG.7

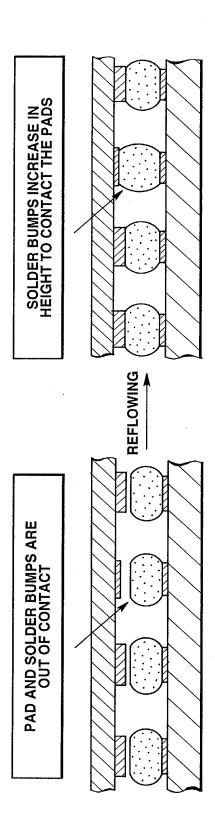


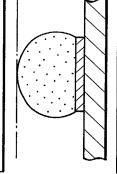
FIG. 8

(a) NOT FLATTENED

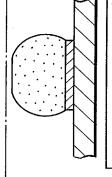
(b) SMALL FLATTENING

(c) MIDDLE FLATTENING

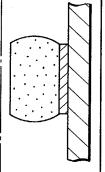
(d) LARGE FLATTENING



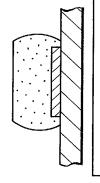
PAD DIA.150μmHEIGHT128μmBUMP DIA.172μmFLAT PORTION DIA.0μmHEIGHT INCREASE0μmAT JOINING



PAD DIA. 150μm
HEIGHT 118μm
BUMP DIA. 172μm
FLAT PORTION DIA. 40μm
HEIGHT INCREASE 10μm
AT JOINING



PAD DIA. 150µm
HEIGHT 98µm
BUMP DIA. 179µm
FLAT PORTION DIA. 150µm
HEIGHT INCREASE 30µm
AT JOINING



PAD DIA. 150µm
HEIGHT 78µm
BUMP DIA. 196µm
FLAT PORTION DIA. 180µm
HEIGHT INCREASE 50µm
AT JOINING

FIG.9

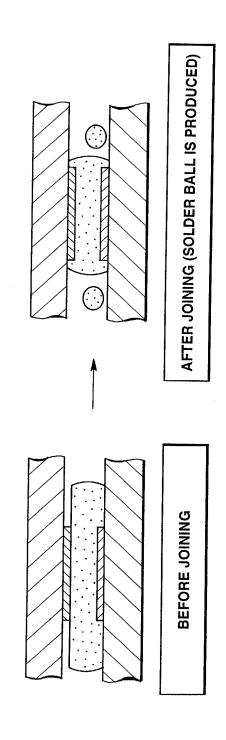


FIG.10

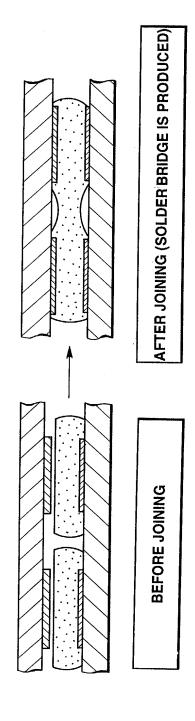
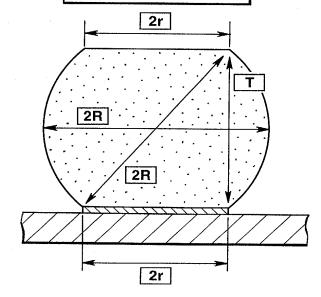


FIG.11A

FIG.11B

AT THE TIME OF FLATTENING OF SOLDER BUMP

BUMP HEIGHT	Т
FLAT PORTION DIA.	2r
BUMP DIA.	2R
PAD DIA.	2r
BUMP VOLUME	s



AT THE TIME OF REFLOWING OF SOLDER BUMP

BUMP HEIGHT	L+t
BUMP DIA.	2L
PAD DIA.	2r
BUMP VOLUME	s

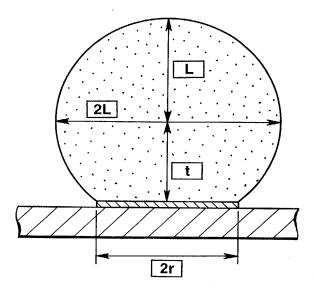


FIG.12A

FIG.12C

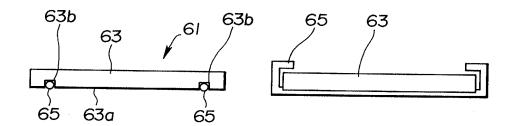


FIG.12B

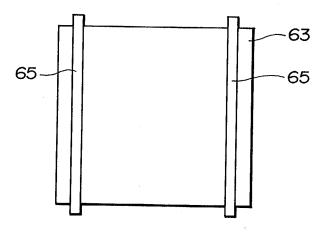




FIG.13C



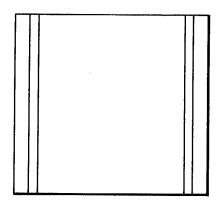


FIG.14A

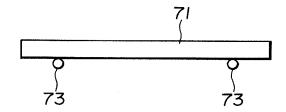
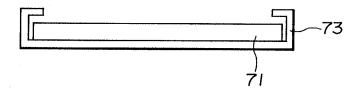


FIG.14B





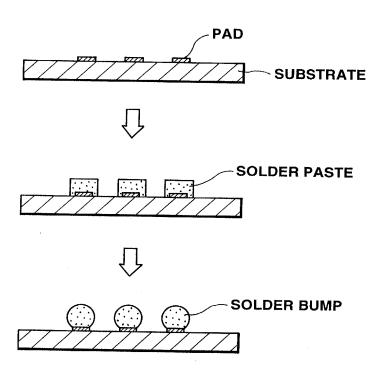


FIG.15B

